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8590. *Odontota collaris* Say. W.  
 —. *Charistena* n. sp. W.  
 —. *Microrhopala vulnerata* Horn. W.  
 6226. *Bius estriatus* Lec. W.  
 —. *Allecula*, two species. W.  
 6329. *Corticcus parallelus* Mels. G.  
 6459. *Notoxus bifasciatus* Lec. W.  
 6550. *Carebara longula* Lec. G.  
 6566. *Eustrophus indistinctus* Lec. W.  
 8626. *Helops arizonensis* Horn. W.  
 6716. *Macrobasis ochrea* Lec. W.  
 6781. *Cantharis deserticola* Horn. W.  
 8705. *Nemognatha punctipennis* Lec. W.  
 8830. *Tanymecus laccena* Hbst. W.  
 —. *Acmægenius* sp. W.  
 8844. *Phacepholis candida* Horn. W.  
 8946. *Cleonopsis pulvereus* Lec. W.  
 8985. *Procas Lecontei* (picipes Steph.) W.  
 9084. *Anthonomus quadrigibbus* Say. W.  
 —. *Cryptorhynchus* sp. W.  
 —. *Baris* sp. W.  
 9422. *Rhodobaenus pustulosus* Gyll. W.  
 9519. *Pityophthorus puncticollis* Lec. W.  
 —. *Pityophthorus* n. sp. W.  
 9535. *Xyloterus bivittatus* Hb. G.  
 9546. *Xyleborus xylographus* Say. W.  
 9620. *Dendroctonus similis* Lec. W.  
 9623. *Dendroctonus simplex* Lec. G.  
 —. *Hylurgops* sp. W.

In connection with the preceding list it may be interesting to note that the season was a very dry one, there being hardly enough rain, except on one occasion, to thoroughly wet the canvas of our tent in the Walnut creek cañon during a stay of five weeks. The bed of the creek was dry for long distances. Collecting "at sugar" was rewarded by very indifferent success. Some fine beetles and moths were taken "at light," by making huge fires of pitch-pine logs. Among these were *Plusiotis gloriosa*, *Plusiotis Lecontei*, *Orizabus Snowi*, *Strategus cessus*, *Aphonis clunalis*, and *Cyclocephala manca*. *Lachnosterna longipilis* was taken at dusk while flying about the foliage of the live-oaks. The only specimen taken of *Chalcolepidius Webbiai* was a large female resting upon an old pine stump. The electric lights at Silver City were very attractive to insects. Here were taken *Sphinx Elsa*, *Halisidota pura*, *Smerinthus occidentalis*, a magnificent *Daritis*, *Dynastes Grantii*, and other fine species of both Lepidoptera and Coleoptera. *Dendrobias quadrimaculatus*, *Clerus Spinolæ*, and *Macrobasis ochrea* were found abundantly upon the blossoms of the tall species of yucca in the vicinity of Deming and Silver City.

#### PRELIMINARY LIST OF KANSAS FISHES.

MR. PRESIDENT: The following preliminary list of the fishes of Kansas is submitted as a part of the report of your Commission on Ichthyology. My thanks are due and are hereby expressed to Professor (now President) David S. Jordan, of Indiana State University, the well-known authority on the fresh-water fish fauna of North America, for his

kindly assistance and suggestions. The list here presented has passed through his hands, and the synonymy and nomenclature are corrected to date, thus making this list correspond in these particulars with President Jordan's Catalogue of the Fishes of North America, soon to be issued by the United States Fish Commission.

Also, Hon. W. S. Gile, State Fish Commissioner, has furnished much valuable information in reference to the native food fishes of the State, as well as to the work of the Commission, for which thanks are expressed.

The fish fauna of the Arkansas river is but little known, and offers a large field for the investigator. The fauna is known to be large, and the few specimens known from that stream are withheld from the list of Kansas fishes until opportunity offers for their careful study.

Of the fish planted in Kansas waters by the State Fish Commission, several kinds foreign to our waters, are known to be increasing in size and numbers; though it would be manifestly inaccurate to place all of them on the list of Kansas fishes, without further knowledge.

Respectfully submitted.

I. D. GRAHAM, Chairman,

State Agricultural College.

Class MARSIPOBRANCHII.

Order HYPEROARTIA.

Family *Petromyzontidae*.

Genus *Ammocetes*, Duméril.

*A. niger* Rafinesque. Small Black Lamprey. One specimen found attached to a "red-horse" from Wild Cat creek, near Manhattan. Length of specimen about 6 inches. (*Petromyzon nigrum* Raf., Ich. Oh. 84, Jordan 349.)

Genus *Petromyzon*, Linnæus, 1758.

*P. argenteus*, Kirtland. Silvery Lamprey. Cottonwood river. (*Petromyzon argenteus* Kirt., Bost. Jour. Nat. Hist., 1840. *Ichthyomyzon hirudo* Grd., Pac. R. R. survey.)

Class PISCES.

Order SELACHOSTOMI.

Family *Polyodontidae*.

Genus *Polyodon*, Lacepede.

*P. spathula*, Walbaum. Paddle Fish, Spoon-bill Cat, Duck-bill Cat. A number of specimens have been taken from the Kansas river at Manhattan, one of which (a poor specimen) is now in the museum of the State Agricultural College. (*Squalus spathula*, Walbaum, Artedi Pisc. 1792. *Polyodon feuille* Lacepede, Hist. Nat. Poiss. *Polyodon folium*, Schneider, Blach. Syst. Ich., etc.)

Family *Acipenseridae*.

Genus *Scaphirrhynchops*, Gill.

*S. platyrhynchus*, Rafinesque. Shovel-nosed Sturgeon, Shovel Fish, Paddle Fish, Hacklebach. Common over State. (*Acipenser platyrhynchus* Raf., Ich. Oh. 1820. *Scaphirrhynchus catapRACTUS* Günther.)

Genus *Acipenser*, Linnæus.

*A. rubicundus*, Le Sueur. Black Sturgeon, Stone Sturgeon, Rock Sturgeon, etc. Kansas river. (*Acipenser rubicundus*, *maculosus* and *liopeltis* Günther; also Milner in Rept. U. S. Fish Com., 1872-73.)

Order GINGLYMODI.

Family *Lepidosteidae*.

Genus *Lepidosteus*.

*L. osseus* (L.) Agassiz. Gar Pike, Long-nosed Gar, Bill-fish, etc. Common in all streams. (*Esox osseus*, Linn. Syst. Nat. *Lepidosteus oxyurus* Raf., Oh. Ich.)

*L. platystomus* Rafinesque. Short-nosed Gar, Duck-billed Gar, etc. Kansas river. Not so common as the preceding. (*Lepisosteus platostomus* Rafinesque, Ich. Oh.)

Order HALECOMORPHI.

Family Amiidae.

Genus *Amia*, Linnæus.

*A. calva*, Linn. Mud Fish, Dog Fish, Bowfin, Grindley, John A. Grindley, Lawyer. Branches of Missouri river, Osage river, etc. (Linn. Syst. Nat. *Amia Occidentalis* De Kay. New York Fauna Fish.)

Order NEMATOGNATHI.

Family Siluridae.

Genus *Noturus*, Rafinesque.

*N. miurus*, Jordan. A Stone Cat. Branches Missouri river. (Nat. Hist. New York, 1877.)

*N. flavus*, Rafinesque. Common Stone Cat. (Raf., Am. Month. Mag., 1818.)

*N. gyrinus*, Mitchell. Yellow Cat, Stone Cat. (*Silurus gyrinus* Mitchell, Amer. Month. Mag., 1818.)

*N. exilis*, Nelson. Stone Cat. Common in Neosho, Osage, etc. (Nelson, Bull. Ill. Mus. Nat. Hist., 1876.)

Genus *Leptops*, Rafinesque.

*L. olivaris*, Raf. Mud Cat, Yellow Cat, Bashaw, Goujon. Kansas river. (*Hopladeus olivaris*, Gill. Ichth. Capt. Simpson's Expl. 1776. *Pelodichthys olivaris* Jordan.)

Genus *Amiurus*, Rafinesque.

*A. vulgaris*, Thompson. A Bull-head. (*Pimelodus vulgaris* Thompson, Hist. of Vermont, 1842. *P. ailurus* Girard, U. S. Pac. R. R. Expl. Fish, 1858.)

*A. melas* (Raf.), Jordan and Copeland. Black Bull-head, Small Black Cat, Bull-head. Appears to be common over the State. Reported in the Washburn Bulletin of Natural History as *A. cragini*, Gilbert, a new species. (*Silurus melas* Raf., Quart. Jour. Sci. Lit., Arts, Lond., 1820. *Pimelodus catulus*, Girard, Pac. R. R. Surv., 1858. *Amiurus obesus* Gill., Bost. Nat. Hist. Soc., 1862.)

*A. natalis*, LeSueur, var. *Cupreus*. Yellow Cat. Kansas and Neosho rivers. (*Pimelodus natalis* LeS., Mem. Mus., 1819. *P. felinus et antoniensis* Girard, Pac. R. R. Expl.)

*A. nigricans* (LeS.), Jordan. Great Fork-tailed Cat, Mississippi Cat, Flannel-mouth Cat, Florida Cat. One of the largest of the catfishes, reaching a weight of 100 pounds or more. (*Gadus acustris* Walbaum, Artedi Pisc. 1792. *Amiurus borealis* Günther. *Pimelodus nigricans* LeS., Mem. Mus. 1819.)

*A. nebulosus*, LeSueur. Bull-Head, Horned Pout, Small Catfish, Schuylkill Cat, Sacramento Cat. Plentiful. This is the *A. catus* Linn. of the synopsis of the Fishes of N. A. by Jordan and Gilbert. (*Silurus catus* Linn., Syst. Nat. 1758. *Pimelodus nebulosus* LeS., Mem. Mus. 1819.)

Genus *Ictalurus*, Rafinesque.

*I. punctatus* (Rafinesque) Jordan. Silver Cat, Blue Cat, Channel Cat, White Cat. Quite common, and much prized as a food fish. (*Silurus punctatus* Raf., Amer. Month. Mag., 1818. *Ictalurus beadle* and *Simpsoni* Gill. *Ichthæurus robustus* Jordan.)

*I. furcatus* (Cuv. & Val.) Gill. Spotted Channel Cat. Not so common as preceding. Larger streams. (*Pimelodus furcatus* Cuv. & Val., 1840. *Amiurus furcatus* Günther & Jordan.)

Order PLECTOSPONDYLI.

Family Catostomidae.

Genus *Ictiobus*, Rafinesque.

*I. carpio* (Rafinesque), Jordan. Carp Sucker. Kansas river. Plentiful. (*Catostomus carpio* Raf., Ich. Oh., 1820. *Carpiodes nummifer* Cope, Proc. Amer. Phil. Soc. Phila., 1870.)

*I. velifer*, Rafinesque. Buffalo Fish, Quillback, Spear Fish, Sail Fish, Skimback. "Eureka lake," (Kansas river.) (*Catostomus velifer* Raf., Ich. Oh., 1820. *I. velifer* Jordan, 1884.)

*I. velifer* var. *bison*, Agassiz. Same locality as above. Less common. (Agassiz Amer. Jour. Sci. Arts, 1854, as *Carpiodes bison*.)

*I. urus*, Agassiz. Mongrel Buffalo. Kansas river and branches of Missouri. (*Carpiodes urus*. Ag. Amer. Jour. Sci. Arts, 1854.)

*I. bubalus* (Raf.), Agassiz. Common Buffalo. Plentiful over State. (*Ambodon bubalus*, Raf. Jour. Phys., 1818. Agassiz Am. Jour. Sci. Arts, 1854. *I. bubalus*, Jordan, Bull. U. S. Nat. Mus.)

*I. cyprinella* (C. and V.) Ag. Jordan. Red-mouthed Buffalo, Big-mouth Buffalo. Streams of Eastern Kansas. (*Sclerognathus cyprinella* C. and V., Hist. Nat. Poiss., 1844.)

Genus *Cycleptus*, Rafinesque.

*C. elongatus* (LeS.), Ag. Black-horse, Gourd-seed Sucker, Missouri Sucker, Suckerel. Kansas river. A remarkable fish; not plentiful. (*Catostomus elongatus* LeS., Journ. Acad. Nat. Sci. Phila., 1817.)

Genus *Catostomus*, LeSueur.

*C. teres*, Mitchell. Common Sucker, White Sucker, Brook Sucker, Fine-scaled Sucker. Common over State. Is the *C. commersoni* of Synopsis. (*Cyprinus teres* Mitchell, Lit. and Phil. Soc. N. Y., 1814. *Catostomus teres*, Günther; also Jordan.)

*C. nigricans*, Le Sueur. Hog Sucker, Stone Roller, Toter, Crawl-a-bottom, Hammer-head, Stone Lugger, Hog Molley. Common; Kansas and Neosho rivers. (LeS. Jour. Acad. Nat. Sci., Phila., 1818. *Hylomyzon nigricans* Agassiz, Am. Jour. Sci. Arts, 1855.)

Genus *Erimyzon*, Jordan.

*E. sucetta* (Lac.), Jor., var. *oblongus*, Jor. Creek Fish, Chub Sucker, Sweet Sucker. Neosho and branches; common. (*Cyprinus succeta* Lac., Hist. Nat. Poiss., 1803. *Catostomus gibbosus* Storer, Fish Mass.; Jordan, Man. Vert.)

Genus *Minytrema*, Jordan.

*M. melanops* (Raf.), Jordan. Spotted Mullet, Striped Sucker, Mingo Sucker. Common in the Neosho. (*Catostomus melanops*. Raf. Ich. Oh., 1820. *C. fasciatus* Jordan, Man. Vert.)

Genus *Moxostoma*, Rafinesque.

*M. macrolepidotum*, LeSueur. Common Red-horse, Mullet, White Sucker, Large-scaled Sucker. Plentiful. (*Catostomus macrolepidotus* and *duquesni* LeSueur, Jour. Acad. Nat. Sci. Phila., 1817. *Myxostoma macrolepidota*, and vars. *duquesni* and *lachrymalis* Jordan, Man. Vert. and Jordan Bull. U. S. Nat. Mus.)

*M. aureolum* (LeS.) Jordan. Red-horse. Not common. (*Catostomus aureolus* LeSueur, Jour. Acad. Nat. Sci. Phil., 1817. *C. macrolepidotus* Jordan, Man. Vert.)

Family *Cyprinidae*.

Genus *Campostoma*, Agassiz.

*C. anomalum* (Raf.), Agassiz. Stone-roller, Stone-lugger. Common in small streams. (*Rutilus anomalus* Raf. Ich. Oh., *Campostoma callipteryx*, *mormyrus*, *gobionium*, and *hippops* Cope, Proc. Acad. Nat. Sci. Phila., 1864.)

Genus *Chrysomus*, Rafinesque.

*C. erythrogaster*, Agassiz. Red-bellied Dace. Marais des Cygnes river. (*Chrosomus erythrogaster*. Raf., Ich. Oh., 1820.)

Genus *Hybognathus*, Agassiz.

*H. placita*, Girard. "A rare species. This specimen agrees with Girard's type."—JORDAN. Kansas river and other branches of Missouri. (Girard, Proc. Acad. Nat. Sci. Phila., 1856.)

*H. nuchalis*, Agassiz. Silvery Minnow. (Agassiz, Amer. Jour. Sci. Arts, 1855. *Hybognathus argyritis*, Jordan.)

Genus *Dionda*, Girard.

D. Meeki, Jordan and Gilbert. A Silvery Minnow. Neosho river. (Jordan, 1884.)

Genus *Pimephales*, Rafinesque.

P. promelas, Raf. Flat-Head, Black-Head Minnow. (Raf. Ich. Oh.) P. promelas var. confertus Girard. Kansas river. (*Hyborhynchus confertus* (?) and *Pimephales maculosus* (?) Girard, Proc. Acad. Sci., 1856.)

P. notatus (Raf.), Agassiz. Blunt-Nosed Minnow. (*Minnilus notatus* Raf., Ich. Oh. and *Catostomus melanohus* Raf., Ich. Oh.)

Genus *Cliola*, Girard.

C. vigilax, B. & G. Silver Fin. This is the only species in this genus. (*Ceraticthys vigilax*, Baird & Girard, Proc. Acad. Nat. Sci. Phila., 1853. *Cliola vigilax*, *velox* and *vivax*, Girard in same and in Pac. R. R. Sur.)

Genus *Notropis*, Rafinesque.

"This genus now takes the place of *Cliola* and *minnilus* in the Synopsis of Fishes of North America."—JORDAN.

N. hudsonius, Jordan. Spawn Eater. "Not hitherto known from west of Lake Michigan. Color darker and gape wider than in Eastern specimens. Perhaps a geographical variety."—DR. JORDAN. Kansas river branches. (*Clupea hudsonia*. De Witt Clinton, Ann. Lyc. Nat. Hist. N. Y., 1824. *Hudsonius fluviatilis* Girard, Proc. Acad. Sci. Phila. 1856.)

N. billingsiana (Cope), Jordan and Gilbert. "Dedicated to Joshua Billings, Esq., author of original observations on 'The Briny Codfish.'" Kansas river and Missouri river at St. Joseph. (*Cyprinella billingsiana* Cope. Hayden's Geol. Sur. Ter. Wyoming, 1870, 1872.)

N. megalops, Rafinesque. Shiner, Red-fin, Dace, etc. Given as *minnilus cornutus*. Mitchell in the Synopsis of Fishes of N. A.

N. camurus, Jordan and Meek. Silver Fin. Neosho river and Western Missouri. (*Cyprinella Whipplei* Girard, Proc. Acad. Sci. Phila. 1856, and Pac. R. R. Surv. X. 270.)

N. lutrensis, Jordan. "This species takes the place of *Cliola forbsei*, *gibbosa*, *pulchella*, *iris*, *jugalis*, *gracilis*, etc., of the Synopsis."—D. S. JORDAN. Very abundant.

N. lineolatus, Agassiz. This is the *Chola lineolata* Ag., of the Synopsis. Marais des Cygnes river.

N. bubalina (Girard), Jordan and Gilbert. Is the *Cliola umbrosa* Grd., of Synopsis. (*Cyprinella umbrosa* Girard, Proc. Acad. Nat. Sci. Phila., 1856, and Pac. Rld. Surv. X, 266.)

N. delicosa, Girard. Straw-colored Minnow. Is the *Cliola Missuriensis* Cope, of the Synopsis. Somewhat common in Kansas river branches. (Hayden's Geol. Surv., Wyoming, 1870-72, *Hybopsis Missuriensis* Cope.)

N. topeka, Gilbert, sp. nov. A new species, discovered by Prof. F. W. Cragin, of Washburn College, Topeka, and published in the Bulletin of the Washburn Natural History Survey of Kansas; also taken by Prof. D. S. Jordan in Missouri river at St. Joseph, in August, 1884.

N. rubifrons (Cope), Jordan. Rosy-faced Minnow. Kansas and Missouri rivers. A beautiful species. (*Alburnus rubifrons* Cope, Proc. Acad. Sci., Phila., 1865. *Notropis rubifrons*, Jordan, 296.)

N. umbratilis (Girard), Jordan. This is the *Minnilus nigripinnis* Gilbert, given as a new species in his notes in the Bulletin Washburn Natural History Survey. (*Alburnus umbratilis* Grd. Proc. Acad. Sci., Phila., 1856. *Alburnellus umbratilis* Grd. Pac. Rld. Surv., X, 260.)

N. zonatus, Jordan. Is the *Alburnus zonatus* of Agassiz, and is reported from branches of the Missouri, and the Neosho river. (*Alburnus zonatus* Putnam, Bull. Mus. Comp. Zool., 1863. *Photogenis piptolepis* Cope, Hayden's Geol. Surv. Wyoming, 1870.)

N. dilectus (Cope), Jordan. Inserted on authority of Prof. Cope. (*Alburnus oligaspis* Cope, Proc. Acad. Sci., Phila., 1864.)

Genus *Phenacobius*, Cope.

P. mirabilis (Girard), Jordan. Common throughout the State. (*Exoglossum mirabile* Girard, Proc. Phila. Acad. Sci., 1856, and Pac. Rld. Surv., X, 256. *Sarcidium scopiferum* Cope, Hayden's Geol. Surv. Terr. Wyoming, 1870, 1872. Jordan, Bull. Hayden's Geol. Surv. Terr., IV, No. 3, 666.)

Genus *Hybopsis*, Agassiz.

H. biguttatus (Kirt), Girard. Hornyhead, River Chub, Jerker. This is the *Ceratichthys biguttatus* Kirt, of the Synopsis. Very common. (*Semotilus biguttatus* Kirt, Bost. Jour. Nat. Hist., 1840, etc.)

H. amblops (Raf.), Girard. Silver Chub. Neosho river. (*Rutilus amblops*. Raf. Ich. Oh., 1820. *Hybopsis gracilis* Agassiz, Proc. Amer. Jour. Sci. Arts, 1854.)

H. gelidus (Girard), Jordan. A small specimen; length 2 inches. Branches of Missouri river. (*Gobio gelidus* Girard, Proc. Acad. Sci., Phila., 1856, and Pac. Rld. Surv., 248.)

H. storerianus, Jordan. Is the *Ceratichthys lucens* Jordan, of the Synopsis. Osage river and branches.

Genus *Platygobio*, Gill.

P. gracilis (Rich.), Gill and Jordan. Flat-headed Chub. Kansas river. (*Cyrinus* [*Leuciscus*] *gracilis*, Rich., Fauna Bor. Amer. Pisc., 1836. *Pogonichthys communis* Girard, Proc. Acad. Sci., Phila., 1856, and Pac. Rld. Surv., X, 247.)

Genus *Semotilus*, Rafinesque.

S. atromaculatus, Mitchell. Chub, Horned Dace. Is the *S. corporalis* (Mitch.), Putnam, of the Synopsis.

Genus *Gila*, Baird and Girard.

G. affinis, Abbott. "Kansas river." Abbott and Jordan. (Abbott, Proc. Acad. Sci., Phila., 1860.)

Genus *Notemigoni*us, Rafinesque.

N. chrysoleucus (Mitch.), Jordan. Golden Shiner, Bream. Eastern Kansas. (*Cyprius chrysoleucus*, Mitch., Rept. Fish. N. Y., 1815. *Abramis americanus* Günther, Jordan, Bull. U. S. Nat. Mus.)

Family *Atherinidae*.

Genus *Labidesthes*, Cope.

L. sicculus, Cope. Brook Silverside, Skipjack. Neosho river. Common. (*Chriostoma sicculum* Cope, Proc. Acad. Sci. Phila., 1865. *Labidesthes sicculus* Cope, Proc. Amer. Phil. Soc., 1870.)

Family *Cottidae*.

Genus *Uranidea*, DeKay.

U. richardsoni (Ag.) J. & G. Blob, Millers Thumb, Muffle Jaws, Bull Head. Neosho river. A widely diffused species, having many varieties. Non-migratory and varying with locality.

Family *Hyodontidae*.

Genus *Hyodon*, LeSueur.

H. alosoides (Raf.) J. & G. Moon Eye. Kansas, Marais des Cygnes and Missouri rivers. (*Amphiodon alosoides* Raf., Journ. Phys. Paris, 1819. *Hyodon chrysopsis* Jordan, Bull. U. S. Nat. Mus. X. 68. *Hyodon Amphiodon* Raf., Ich. Oh., 1820.)

H. tergisus, LeSueur. Toothed Herring, Moon Eye. Common. (LeS. Jour. Acad. Sci. Phila., 1818. Jordan, Bull. U. S. Nat. Mus.)

Family *Dorosomatidae*.Genus *Dorosoma*, Rafinesque.

*D. cepedianum* (LeS.) Gill. Gizzard Shad, Hickory Shad. Very common and very handsome. (*Megalops cepedianus* LeS., Jour. Acad. Sci. Phila., 1817.)

Family *Percopsidae*.Genus *Percopsis*, Agassiz.

*P. guttatus*, Agassiz. Trout Perch. Described by Gill from Kansas under the name of *Percopsis hammondi*. (Agassiz, Lake Superior, 1850. *P. hammondi* Gill, Proc. Acad. Sci. Phila., 1864.)

Family *Cyprinodontidae*.Genus *Fundulus*, Lacépède.

*F. zebrinus*, Jordan and Gilbert. Striped Killifish. Kansas river and branches. (Nom. sp. nov. Jordan and Gilbert, Synopsis.

*F. diaphanous* (LeS.), Agassiz. Spring Minnow. Kansas river. (*Hydrargyrea diaphana* LeS., Jour. Acad. Nat. Sci. Phila., 1817. *Fundulus multifasciatus* of most writers.)

Genus *Zygonectes*, Agassiz.

*Z. notatus* (Raf.), Jordan. Top Minnow. Neosho river. (*Semotilus notatus* Raf. Ich. Oh., 1820. *Zygonectes pulchellus*, Girard, Proc. Acad. Sci. Phila., 1859.)

Family *Anguillidae*.Genus *Anguilla*, Thunberg.

*A. rostrata* (LeS.), DeKay. Common Eel. Believed to be common throughout the State. (*Muraena rostrata* and *bostoniensis* LeSueur, Jor. Acad. Sci. Phila. *Anguilla bostoniensis* Günther, *Anguilla tyrannus* Girard, U. S. Mex. Bound Surv.)

Family *Gasterosteidae*.Genus *Eucalia*, Jordan.

*E. inconstans*, Kirtland. Brook Stickleback. Length, 2½ inches. Abundant northward. Described by Cope, from Kansas, as *Gasterosteus micropus*, (Kirtland, Bost. Journ. Nat. Hist., 1841. Cope, Phila. Acad. Sci. 1865. *Gasterosteus williamsoni* Girard. Pac. Rld. Surv.)

Family *Centrarchidae*.Genus *Pomoxys*, Rafinesque.

*P. annularis* (Raf.), Crappie; Bachelor, New Light; Campbellite, Bride Perch, Chinquapin Perch, etc. Branches Kansas river below dam at Lawrence and streams of southeast. A valuable food fish. (Rafinesque, Amer. Month. Mag., 1818. *Pomoxys storerius*, *brevicauda*, *intermedino* and *protacanthus*, Gill, Proc. Acad. Sci. Phila., 1865.)

Genus *Ambloplites*, Rafinesque.

*A. rupestris* (Raf.), Gill. Common Rock Bass, Red Eye, Goggle Eye. Another valuable pan fish, though small in size. (*Bodianus rupestris* Raf. Am. Month. Mag. 1817. *Centrarchus ceneus* Jordan Man. Vert.)

Genus *Chaenobryttus*, Gill.

*C. gulosus* (C. and V.), Jordan. War-mouth, Red-eyed Bream. Kansas river. (*Pomotis gulosus* C. and V. 1829. *Chaenobryttus viridus* Jordan, Man. Vert. Ed. 21.)

Genus *Lepomis*, Rafinesque.

*L. cyaneus* (Raf.), Red-Eye, Blue Spotted Sunfish. Common. (Raf. Journ. de Phys., 1819. *Calliurus longulus*, *diaphanus*, *formosus*, and *microps*, Girard, Pac. Rld. Surv. and U. S. Mex. Bound. Surv. 1859. *Bryttus signifer* Grd., Pac. Rld. Surv. *Apomotis cyaneus* Jordan, Man. Vert. ed. 2.)

*L. humilis* (Girard), Cope. Red-spotted Sunfish. State, locally abundant. (*Bryttus*



*humilis*, Girard. Phila. Acad. Sci., 1857, and Pac. R. R. Surv. *L. anagallinus* Jordan, Man. Vert. ed., 2.)

*L. megalotis* (Raf.), Cope. Long-eared Sunfish. Neosho and branches. Common. (*Ictalus megalotis*, Raf. Ich. Oh., 1820. *Xenotus megalotis* Jordan, Man. Vert. ed. 2. *Lepomis auritus*, Cope, Jour. Phila. Acad. Sci., 1858. *Pomotus fallax*, Girard, Pac. R. R. Surv.)

*L. pallidus* (Mitch), Gill and Jordan. Blue Sunfish; Dollardee, Copper-nosed Bream, common. (*Labrax pallidus*, Mitchell. Trans. Lit. and Phil. Soc. N. Y., 1815, and Jordan Man. Vert. *Pomotis luna*, Girard, Pac. R. R. Surv.)

Genus *Micropterus*, Lacépède.

*M. salmoides* (Lac.), Henshall. Large-mouthed Black Bass: Oswego Bass, Green Bass, Bayou Bass; Neosho and branches, plentiful. Reported from branches of Kansas river, below dam at Lawrence. An excellent food fish. Prefers quiet waters. (*Labrus salmoides*, Lac. Hist. Nat. Poiss., 1802. *Huro nigricans*, Günther. *Micropterus nigricans*, Gill, Proc. Amer. Asso. Adv. Sci., 1873, and of most late writers. *Dioplites nuecensis*, Girard, Mex. Bound. Surv.)

*M. dolomieu*, Lacépède. Small-mouthed Black Bass. The prince of good game fish. Plentiful in Neosho, Spring, and Marais des Cygnes rivers. (Lacépède, Hist. Nat. Poiss., 1802. Henshall, Book of the Black Bass, 1881. *Grystes salmonoides*, Günther.)

Family *Percide*.

Genus *Ammoerypta*, Jordan.

*A. pellucida* (Baird), J. & G. Sand Darter, clear sandy streams. (*Etheostoma pellucidum*, Baird's MSS. *Pleurolepis pellucidus* Jordan Man. Vert. ed. 2.)

Genus *Percina*, Haldeman.

*P. caprodes* (Raf.), Girard. Log Perch, Rock-fish, Hog-molly, Hog-fish. Eastern Kansas. The largest of the Darters; length 6 to 8 inches. (*Sciæna caprodes* Raf., Amer. Month. Mag., 1818. *Pileoma semi-fasciatum* DeKay, New York Fish Fauna, 1848. *Pileoma caprodes* Jordan, Man. Vert.)

Genus *Boleosoma*, DeKay.

*B. olmsteadi* var. *maculatum*, Girard. Darter. Neosho and Kansas rivers.

*B. olmsteadi* var. *ozarcantum*, Jordan. A "Johnny Darter." Neosho and branches.

*B. mesotum*, Cope. Clear sandy streams "in Kansas" Cope.

Genus *Diplesion*, Rafinesque.

*D. blennioides* (Raf.), Jordan. Green-sided Darter. A most beautiful fish. Wild Cat creek, near Manhattan; probably occurs throughout the State. (*Etheostoma blennioides* Raf. Journ. de Phys., 1819. *Hyostomo cymatogrammum* Jordan, Man. Vert.)

Genus *Hadropterus*, Agassiz.

*H. phoxocephalus* (Nelson), Cope and Jordan. Common in Marais des Cygnes. (*Etheostoma phoxocephalum* Nelson, Bull. Ills. Mus. Nat. Hist. I, 1876. Jordan, Man. Vert. ed. 2.)

Genus *Etheostoma*, (*Pæcilichthys* of Synopsis.) Rafinesque.

*E. varietum*, Kirt. var. *spectabile* Ag. Soldier-fish, Rainbow Darter, Blue Darter. Kansas river. Common.

*E. whipplei*, Girard. Arkansas river. Perhaps doubtful in Kansas.

*E. fusiforme*, Jordan; embraces *barratti*, *gracilis*, *fusiformis*, *butlerianus* and *palustris* of the Synopsis. Common in Marais des Cygnes.

*E. zonale*, Cope, var. *arcansanum*, Jordan and Gilbert. Neosho river.

Genus *Stizostedion*, Rafinesque.

*S. vitreum* (Mitch.), Jordan and Coptland. Wall-eyed Pike, Dory, Glass-eye, Yellow Pike, Blue Pike, Jack Salmon. Kansas and Neosho rivers; probably in all waters of State. Valuable. (*Perca vitrea* Mitchell, Supl. Amer. Month. Mag., 1818. *Lucioperca americana*, Günther; Jordan, Bull. U. S. Nat. Mus. *Stizostethium vitreum* var. *Salmonium* Jordan, Man. Vert.)

*A. canadense* (Smith), Jordan. Sauger, Sand Pike, Gray Pike, Horn-fish. Kansas river and Mill creek. (*Lucioperca canadensis*, C. H. Smith MSS. *Lucioperca grisea*, DeKay, N. Y. Fish Fauna, 1842; Jordan Bull. U. S. Nat. Mus.)

Genus *Roccus*, Mitchell.

*R. chrysops* (Raf.), Gill. White Bass, Striped Bass, "Grass Bass." "Eureka lake," (Kansas river.)' (*Perca chrysops* Raf. Ich. Oh., 1820. *Labrax albidus*, DeKay, New York Fish Fauna, 1842.)

Family *Sclenidae*.Genus *Aplodanotus*, Rafinesque.

*A. grunniens*, Raf. Sheepshead, Thunder-pumper, Drum, Bubbler, Croaker, White Perch, Grunting Perch. Very common in Kansas river. (*Aplodinotus grunnicus* Raf., Jour. de Phys., 1819. *Ambodon neglectus* Girard, Mex. Bound. Surv., 1859.)

Family *Clupeidae*.Genus *Clupea*, Linnæus.

*C. chrysochloris* (Raf.), Jordan and Gilbert. Ohio Shad, Skip Jack. Abundant in larger streams. (*Pomolobus chrysochloris* Raf., Ichth. Oh., 1820.)

## TO BE LOOKED FOR.

Fishes probably occurring in Kansas waters, but not yet identified in the State:

1. *Catostomus retropinnis*, Jordan.
2. *Moxostoma velatum*, Cope.
3. *Couesius physignathes*, Cope.
4. *Zophendum plumbeum*, Girard.
5. *Notropis rubellus*, Agassiz.
6. *Aphredoderus sayanus*, Gilliams.
7. *Alvordius aspro*, Cope.
8. *Microperca punctutata*, Putnam.
9. *Roccus interruptus*, Gill.

The following species have been taken from the Arkansas river or branches near Ft. Smith by Profs. Jordan and Gilbert, and probably occur in Kansas:

10. *Ammocrypta vivax*.
11. *Hybopsis æstivalis*.
12. *Lepidosteus tristœchus* (Bloch and Schneider) J. and G.
14. *Cottogaster copelandi*.
15. *Hadropterus aspro*.
16. *Notropis whipplei*.
17. *Notropis illecebrosus*, Girard.
18. *Notropis blennius*.
19. *Noturus nocturnus*, Jordan and Gilbert sp. nov.
20. *Gambusia patruelis*.
21. *Placopharynx Carinatus*, Cope.
22. *Opsopœodus emiliae*.
23. *Ulocentra histrio*, Jordan and Gilbert, sp. nov.
24. *Boleosoma camurum* (Vailantia.)

## FISHES PLANTED IN THE WATERS OF KANSAS BY THE STATE FISH COMMISSION.

*Esox lucius*, Linn. Common pike.  
*Stizostedion vitreum*, Mitchell. Jack salmon.  
*Micropterus Dolomieu*, Henshall. Small-mouthed black bass.  
*Roccus interruptus*, Gill. Striped or yellow bass.  
*Ictalurus furcatus*, Cuv. & Val. The channel and silver catfish.  
*Pomoxys annularis*, Raf. Crappie, Newlight, etc.  
*Perca americana*, Schranck. Yellow or ringed perch.  
*Salmo fontinalis*, Mitchell. Brook trout, speckled trout.  
*Salmo irideus*, Gibbons. Rainbow trout, California brook trout.  
*Oncorhynchus tshawytscha*, Walbaum. Columbia salmon, Quinnot salmon.  
*Salmo salar* var. Sebago, Linn. Land-locked salmon.  
*Clupea sapidissima*. Common shad.  
*Cyprinus Carpio*. German carp.

## LIST OF UNIONIDÆ, COLLECTED IN KANSAS RIVERS, WITH LOCALITIES.

BY E. A. POPENOE, STATE AGRICULTURAL COLLEGE.

The following named fresh-water mussels have been collected within the few years past by myself, or, at my request, by Mr. S. C. Mason, and are now represented by series more or less full, in my private collection.

I must acknowledge my indebtedness to Mr. S. C. Mason, of Wakefield, Kansas, for his generous aid in collection; and to Mr. R. E. Call, of Des Moines, Iowa, for his kindness in examining and determining specimens.

The distribution of the species, so far as shown by the series in my collection, is indicated in the following list, by the abbreviations of the names of the rivers where found

## LIST OF LOCALITIES.

B. Blue river, at Manhattan.  
 W. Wild-Cat creek, near Manhattan.  
 D. Deep creek, near Wabaunsee.  
 N. Neosho river, near Burlington.  
 F. Fall river, in Elk county.  
 V. Verdigris river, in Wilson county.  
 K. T. Kansas river, at Topeka.  
 K. M. Kansas river, at Manhattan.  
 Other localities as written.  
*UNIO alatus*, Say. B., W.  
     *anodontoides*, Lea. V., N., F., D., W.  
     *asperrimus*, Lea. V., N., F., B.  
     *ater*, Lea. F., N., V.  
     *coccineus*, Lea. Typical. F.  
     *coccineus*, Lea.  
         Var. *gouldianus*, Lea. V. F.  
     *cornutus*, Bar. F.  
     *cylindricus*, Say. N.  
     *donaciformis*, Lea. B., N.  
     *fragosus*, Con. F.  
     *elegans*, Lea. N., B., F.